

## CHAIRMAN Resource

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**From:** Tom Gurdziel <tgurdziel@twcny.rr.com>  
**Sent:** Saturday, February 06, 2016 3:07 PM  
**To:** CHAIRMAN Resource  
**Cc:** Johnson, Michael; Bridget Frymire  
**Subject:** [External\_Sender] Talking Points  
**Attachments:** Talking Point, 1.jpg; Talking Point, 2.jpg

Hello,

I would guess that at least a few high level people attending RIC2016 will bring up how hard it is today to actually make money running nuclear power plants in the United States. So, I thought of one point in particular that I wanted to bring to your attention, and went down to the cellar to look for the references. I have those references, (they are on SONGS), but I also found these thoughts that I may or may not have actually sent out maybe a year or two ago. So I copied the first two pages, (the third only has my name on it). I hope they are of some use.

Thank you,

Tom Gurdziel

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**To:** cost of system engineers  
**Subject:** Making Money

Good morning,

“Why can’t I make the desired amount of profit with my nuclear power plants?”

Actually, nobody ever asked me this question but I am going to answer it anyway. One answer is: change has occurred and it HAS NOT been addressed.

Let’s go back a little. In and prior to the early 1980s, nuclear powerplants in New York were owned by utilities. Now that may not seem significant, but it is. You see, utilities, (which were regulated at that time), could tell the Public Service Commission, (PSC), that they HAD to do this or that and, most likely the PSC would allow them to collect the cost of that requirement PLUS some additional mark up for their administrative trouble. I believe that, if the requirement was some piece of capital equipment, they could recover its cost PLUS a very decent return on that investment. This picture was very clear: the more you spend, the more you make.

As a result, we, (operating one nuclear unit at that time), went from a fire brigade made up of people already working at other jobs at the plant to an actual full-time fire department. But, we also had another nuclear unit being built on the same site. Can you guess if we eventually had ANOTHER full time fire department for the other unit? (The answer is yes, of course we did.)

An operating nuclear powerplant will occasionally have troubles, and, I will tell you that one we had was with the ventilation system for the Technical Support Center or “TSC”. So, when it would (regularly) fail an inspection/test, we would call the people in the Nuclear Division and they would (regularly) send up two or three engineers or technical people. They would look around and adjustments would be made and the system would pass. (I liked this concept and would have liked it a whole lot better if the people doing the troubleshooting had a higher level of knowledge/training.)

Then we started with the “system engineer” idea. Those people who would come up for the TSC problem(s) were still in the Nuclear Division but now we also acquired site-assigned engineers to each be assigned to probably 3 systems. Naturally, the utility customers paid the full costs for all these system engineers.

Let me point out that the spend-more concept was also applied to the overall cost of the nuclear plant under construction. In our case the end result became a cap on construction cost (of 6.375 billion dollars) applied by the NY Public Service Commission.

Then change occurred. (I think the full time fire department was gone by now.) The change I am referring to is the decision by the PSC to deregulate the utilities. They had a choice of keeping their various generating stations and operating in a competitive environment OR selling them and keeping their regulated transmission and distribution business. I have to give them credit: at this time they knew, after 50 years of regulated generating experience, that they could not compete.

So we sold off our hydro stations, (or the licenses to them), and the couple gas turbines and the fossil plants and the nuclear plants.

Here is the unaddressed change: the costs of the system engineers are no longer being carried by the local electricity customers. Are they earning their cost today? Let’s take a look.

## Indian Point

Eight years ago, a fire in a main transformer should have resulted in some effective trouble shooting and adequate corrective actions AND some sort of acknowledgement that at least periodic monitoring of the (non-safety related) main transformer was necessary. The repeat fire this year shows that such did not occur. How many system engineers at Indian Point have been assigned to the main transformers and the fire protection of them? In fact, expecting that a cooperative effort would exist from all the site-employed system engineers, how many system engineers at Indian Point over the last 8 years did not anticipate that another fire would occur? And, since the loss of such a piece of equipment costs reputation, but also income, how many other Entergy system engineers in their fleet did not offer effective suggestions?

So, I would compute the cost for Entergy/Indian Point system engineers as their yearly pay (plus benefits) for all of them times the elapsed eight years. That might be about 21 million dollars for eight years if they have 40. But don't stop there. Add to that the cost of the loss of generation, the cost of transformer installation, the cost of the replacement transformer that will have to be ordered, and the extra cost that will now be incurred in the effort to extend the plant licenses.

## Millstone

If you had continuing problems with a (non-safety related) turbine driven auxiliary feedwater pump, would you expect your system engineers to use the latest available information in their troubleshooting efforts? Dominion provided, to the inspecting NRC team as a reference, an out of date EPRI document! Actually, it is my belief that if they had actually read the older reference, they may have seen advice of what to do when your turbine driven pump both shuts itself off, then starts up after 10 or 15 minutes without any operator intervention. Here I would compute the cost of system engineers as above: all those on site times their monthly expense times the length of time the pump did not work correctly. (Note that the time it did not work correctly may still be continuing.)

## Crystal River

This may not have been done by a system engineer, but must have been done by some Progress Energy technical employee. Here a (safety-related) piece of equipment, (the entire containment building), was destroyed by an inadequate tendon stress relieving program, despite receiving advice to the contrary from a knowledgeable and EXPERIENCED source. It is hard to estimate the cost here but it certainly includes the cost of all the management chain above the decision maker, (who incidentally was trying to save \$1,000,000, a very small sum in comparison), and the cost of one complete US nuclear powerplant.

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## SONGS

Would you put monitoring equipment on a large piece of equipment during transportation then NOT provide your people with a limiting value to signify a problem to them? Southern California Edison did. So, when a large impact was recorded on a replacement steam generator, they took no action. And let me say, it is my opinion that they knew there was a problem because, if you read the two NRC Augmented Inspection Reports, you will see that an inspection prior to installation, done on the first two, was NOT DONE on the one that failed. So, instead of repairing the one with high impact, it got installed and failed. I calculate the cost here as two complete power plants when, in my opinion, at the worst it could have been only one.

## Final Question

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What do you think? ~~If~~ those 60% efficient combined cycle gas turbines destroying the profitability of the 33% nuclear plants, or is it the type of decision-making shown in the examples above?

Thank you,

## CHAIRMAN Resource

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**From:** Johnson, Michael  
**Sent:** Sunday, February 07, 2016 10:47 AM  
**To:** Tom Gurdziel; CHAIRMAN Resource  
**Cc:** Bridget Frymire  
**Subject:** Re: Talking Points

Thanks Tom. There will be a discussion on our initiative to improve effectiveness and efficiency and on an industry, "Delivering the Nuclear Promise." I think you would find them to be interesting.

Mike

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**From:** Tom Gurdziel <tgurdziel@twcny.rr.com>  
**Sent:** Saturday, February 6, 2016 3:06 PM  
**To:** CHAIRMAN Resource  
**Cc:** Johnson, Michael; Bridget Frymire  
**Subject:** [External\_Sender] Talking Points

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